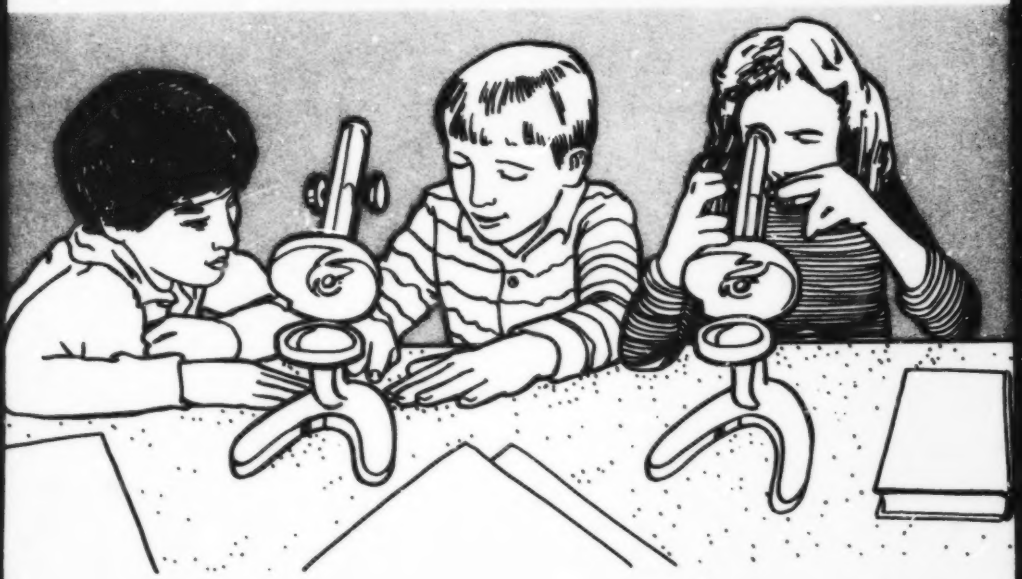
Curriculum & Instruction Review

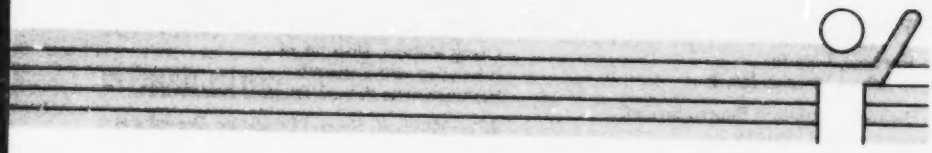
Toward The Year 2000



Future Directions in Curriculum and Instruction

86-1005/

Saskatchewan
Education



Toward The Year 2000

Future Directions in Curriculum and Instruction

Minister's Advisory Committee
Curriculum and Instruction Review
December 1985

Acknowledgements

Members of the Minister's Advisory Committee on Curriculum and Instruction Review

Jim Burnett, Director
Regina School Division No. 4

Pat Dickson, Assistant Superintendent
Saskatoon School Division No. 13

Richard Groshong, Secretary
Torquay Board of Trustees

Phil Hammel, Chairman
St. Paul's R.C.S.S.D. No. 20

Dave Hawley, Director
Kindersley School Division No. 34

Dub Henderson, Regional Director
Saskatchewan Education

Naomi Hersom, Dean
College of Education
University of Saskatchewan

Susan Holmberg, Parent
Yorkton

Willard Kallio
Former School Board Chairman
Dinsmore

Mary Jane Kasyon
Dene Materials Developer
Stony Rapids

Barbara Keirnes-Young, Director
Saskatchewan Education

Glen King, Teacher
Nipawin School Division No. 61

Terry McKague, Executive Assistant
Saskatchewan Teachers' Federation
Review Co-ordinator

Craig Melvin, Director of
Education and Research
Saskatchewan School Trustees Association

June Mitchell, Special Education Consultant
Regina School Division No. 4

Mavis Olesen, Teacher
Regina School Division No. 4

Donna Palmer, Regional
Co-ordinator-Curriculum
Saskatchewan Education

George Richert, Professor
Faculty of Education
University of Regina

Beryl Robinson, Teacher
Kindersley School Division No. 34

Karen Rongve, Principal
St. Paul's R.C.S.S.D. No. 20
Review Chairperson

Phil Schalm, Executive Director
Saskatchewan Education

Harold Schultz, Executive Assistant
Saskatchewan Teachers' Federation

Peter Tarnowsky, Principal
North Battleford School Division No. 103

Walter Wenaas, Principal
Estevan School Division No. 95

The Minister's Advisory Committee wishes to recognize and sincerely thank Dianne Warren for preparing this report. The Committee also expresses its appreciation to Ann Seifert for her typing and clerical support, to Kelly Fulton for typesetting this report and others in the series, and to Ralph Lorincz for his assistance in the area of graphic arts.

Table of Contents

	Page
SUMMARY OF CURRICULUM AND INSTRUCTION REVIEW REPORTS	4
INTRODUCTION	6
CHAPTER ONE: THE THOUGHTS OF FUTURISTS	7
An Age of Information	7
A New Civilization	9
The Idea of Transformation	9
The Thoughts of Social and Natural Scientists	10
The Thoughts of Saskatchewan Futurists	11
Summary	13
CHAPTER TWO: THE CURRICULUM OF THE FUTURE	14
Educating for a Changing World	15
Educating for a Better World	21
Summary	25
CHAPTER THREE: CHANGE IN SCHOOLS	26
Instruction	26
School Planning	30
The Old and the New	32
RESOURCES	34

Summary of Curriculum and Instruction Review Reports

The Minister's Advisory Committee on Curriculum and Instruction collected a large amount of information on educational issues. In addition to its final report, **Directions**, the Committee prepared five booklets which contain background information. These are described briefly below.

DIRECTIONS: The Curriculum and Instruction Review was initiated as a means of assessing educational needs in Saskatchewan and proposing improvements to the education system. **Directions**, the final report, presents the major concerns, the Committee's response to those concerns, and the Committee's recommendations for educational improvement.

WHAT THEY SAID: The Curriculum and Instruction Review sought public opinion on education by distributing a questionnaire, holding public meetings around the province, and asking for the submission of briefs. **What They Said** presents the educational views of those people who responded to the Committee's requests.

SASKATCHEWAN EDUCATION: The Curriculum and Instruction Review proposed a number of changes that will affect the Department of Education. **Saskatchewan Education** outlines those changes and examines the role and responsibility of the Department in implementing the recommendations of the Review.

SASKATCHEWAN CHILDREN: The success of an education system is largely dependent upon its ability to respond to the needs of its students. **Saskatchewan Children** explores the educational needs of children and the unique characteristics of children in this province.

TOWARD THE YEAR 2000: Technological and social changes of the future will undoubtedly affect life on this planet. **Toward the Year 2000** examines the predictions of futurists as to how education should change in order to better prepare students for the future.

SCHOOL IMPROVEMENT: A school's environment has a profound effect on both the productivity and satisfaction of its students. **School Improvement** examines the effect of school environment on learning, and explores ways of building more effective learning environments in Saskatchewan schools.

Introduction

How well are schools preparing children to cope with the future? That was one of the major questions posed by the Curriculum and Instruction Review, a two-year review designed to assess education in Saskatchewan and recommend changes for educational improvement. It is a question that, while always in the forefront of educational planning, has assumed new importance because of social and technological changes.

One of the purposes of education is to provide children with the skills and knowledge needed to function capably as adults. With the world changing rapidly, the abilities acquired in schools today need to be reassessed, as do the ways in which students are expected to learn. It will be found that many of what are now considered to be basic skills will still be basic in the year 2000. However, changes in society and technology will demand that other basics be added to the present list and that some be deleted because they have become obsolete. And when the content of the curriculum changes, ways in which the curriculum is delivered must change correspondingly.

The abilities aquired in school today need to be reassessed, as do the ways in which students are expected to learn.

In order to assess student needs in light of future changes, it is necessary to make predictions about how society will function in years to come. There are those people (natural scientists, social scientists, philosophers, writers, and educators, to name a few) who have studied in a variety of areas in order to make educated guesses about the future.

The work of these "futurists" provides valuable information for educators. Educational planners can examine the ideas of futurists to determine what skills, attitudes, and knowledge will be most appropriate for the year 2000 and beyond. Current curricula and instructional practices can then be assessed in terms of their relevance to the future.

There is danger in isolating the future from the present if the relationship between the two is lost.

Any predictions of the future are uncertain and subject to skepticism. In addition, there is danger in isolating the future from the present if the relationship between the two is lost. Nonetheless, it is important to consider the possibilities in order to engage in long-term planning. Educational planners can combine predictions about the future, evident trends, and a "vision" of where they would like education to go. The world is changing quickly. Planning must be ongoing if educators are to keep stride with the future.

CHAPTER ONE
The Thoughts of Futurists

What should be taught in schools? That question has intrigued people from the time formalized education began. An assumption implicit in the mandate given to the Curriculum and Instruction Review was that the content of courses should be derived primarily from the needs of Saskatchewan students. Determining what those needs are and will be in the future is the most difficult task in deciding what should be taught in Saskatchewan schools.

In order to project what student needs will be, educators must consider future trends and attempt to arrive at some conclusions regarding the state of the world. Many futurists, some of them educators, have done this, and their findings may provide a basis for discussion and decision-making.

Futurists work in a variety of ways. Some concern themselves with what they believe is likely to occur; others focus on a range of possibilities; still others concentrate on what is preferable or desirable. Their methods vary and include the study of such things as history, anthropology, causality, current trends, management sciences, ecology, case studies, utopian writing, and sacred writing, to name only a few.

Some futurists concern themselves with what they believe is likely to occur; others focus on a range of possibilities; still others concentrate on what is preferable or desirable.

The study of the future has a long history. Although futures study as an academic discipline did not become established until the twentieth century, predictions and visions of the future have been around for centuries. Recently, writers about the future have attempted to popularize the discipline. In addition, studies have been conducted to investigate the possibilities of applying futures study to education and the work place. What follows here is a description of the ideas of a limited number of futurists. This description is intended to provide a brief overview of current ideas on what the world will be like in years to come.

An Age of Information

"Information Age" has become a catch phrase used to describe a new age dominated by an abundance of information and communications technology. Many futurists believe this technology is changing society

Many futurists believe communications technology is changing society and moving it away from the industrialism which gave rise to a major era in world history.

and moving it away from the industrialism which gave rise to a major era in world history.

A number of concerns arise from recognition of this change. Several futurists talk about the changing job market, and point out that fewer people are being employed in the production of goods and more people employed in communications services such as consulting and teaching. In addition, there is discussion about changes in the way people use information to make decisions. It is possible for information and knowledge to be easily accessible to large numbers of people.

These changes have obvious implications for education. People need to be prepared in different ways for work and they need a different body of skills and values in order to handle the vast amounts of information available to them.

One futurist who believes the world is currently caught between the Industrial Age and the so-called Information Age is John Naisbitt, author of the book *Megatrends*. Naisbitt conducted a study of present American society by examining media reports. He believes the key to dealing with the future is understanding the present, and that present trends will define the new society.

Among the trends that Naisbitt highlights are the following:

- explosion of new technology and production and distribution of information
- human responses to technological innovations (Naisbitt sees the hospice movement, for example, as a response to the development of high technology in hospitals)
- more self-reliant people
- more grassroots innovations
- national economic system changing to more global economic system
- multiple options for people to make personal choices from.

Naisbitt believes, then, that the job market in the future will be different from the job market of the industrial era. In addition to understanding technology, people will need to know how to make value judgements and decisions, both in the world of work and their personal lives.

A New Civilization

Alvin Toffler is a futurist who has written widely about our changing world. In 1980 he published *The Third Wave*, in which he examines the current direction of societal change in light of past changes. His belief is that the modern world has evolved through two major phases, an agricultural civilization and an industrial civilization. Toffler believes the world is currently riding on a wave of change and that a new civilization will emerge.

Toffler's position about the future of the world is an optimistic one. He believes that many occurrences of today (economic instability, the breakdown of the family, the emergence of separatist movements, and world-wide violence) are interrelated. He sees them as indicative of the death of industrialization and the rise of a new civilization. His optimism is rooted in his belief that, if the right choices are made, the world will evolve into a better, more humane place.

Despite his optimism, Toffler delivers a warning. He states that real dangers are facing the world today and could bring about its ultimate destruction. He gives, as examples, nuclear annihilation, ecological disaster, large-scale technological disaster, and regional violence; the world is at the point where any one of a number of catastrophies could occur. Toffler's warning is that we need a systematic framework to get us through the turbulence of change. Old ideologies, old attitudes, old ways of thinking, old methods of communication, and old geopolitical relationships will not get the world through this time of crisis.

Toffler believes the world is currently riding on a wave of change and that a new civilization will emerge.

The Idea of Transformation

Some futurists use the word "transformation" to describe the changes they see occurring in the world. They believe that transformation or growth is a response to crisis and stress. They point to the peace movement, the self-help movement, and the growing concern for the ecology as a few of many examples of transformation occurring at the grassroots level.

In his book *An Incomplete Guide to the Future*, Willis Harman asserts that the Industrial Era has failed to maintain the habitat of the planet, has not fostered socially responsible development and management of technology, and has not given each individual a chance to contribute meaningfully to society. A transformation could occur because of the dissatisfaction of large numbers of people.

In a speech given to the World Futures Society on the topic "Educating for Peace" (available on audio tape) Harman stated, "When fundamental changes take place they never take place from the top. . . . They invariably take place. . .because vast numbers of people change their minds a little bit."

Marilyn Ferguson also writes about the idea of transformation in her book *The Aquarian Conspiracy*. She believes that people in all walks of life are undergoing personal transformations and that, collectively, these people are bringing about a new civilization or era.

The Thoughts of Social and Natural Scientists

The purpose of the study was to learn what social and natural scientists think people will need to know and understand to cope and live humanely in the future.

In 1981, Phi Delta Kappa sponsored a unique study in which Harold Shane, a renowned educator and futurist, contacted 132 leading social and natural scientists from around the world to collect their ideas about the future. The purpose was to learn what physicists, chemists, biologists, psychologists, economists, and other social and natural scientists think people will need to know and understand in order to cope and live humanely in the future.

Shane discussed the study in a speech on the topic of "Education for the New Millenium" (available on audio tape) at the 1981 annual conference of the Association for Supervision and Curriculum Development. From the study, five images or portraits of the future emerge. In his speech Shane pointed out that the images are not necessarily compatible, as they were derived from the most commonly mentioned themes of a large number of scientists with sometimes varying viewpoints. Shane's images of the future are as follows:

1. There will be a return to a low energy, labor intensive era because of depletion of natural resources.
2. The future will be enormously influenced by scientific and technological advances.
3. The Western world will reindustrialize in order to compete with foreign industrialization. The world, then, will be similar to what it is today with fewer problems.
4. The future will see some basic changes in the way humans think and behave.
5. Various kinds of authoritarian restraints will be imposed on society.

The 132 scholars interviewed identified a number of sources of turbulence or conflict in the world. The following were among those most often mentioned:

- conflicting values
- conflict between rich and poor nations
- conflict between "super powers" and smaller nations
- world hunger
- resource depletion
- nuclear threat
- problems associated with management of large governments
- inflation
- harmful effects of television.

Like Toffler, Shane is optimistic, yet delivers a warning. The frightening trends described in the study do not necessarily foreshadow the destruction of current civilization. However, Shane sees a need for recognition that the world is different from what it used to be. He believes people must develop new ways of thinking and new ways of behaving. Survival behaviors of old have become a threat; it is time to reexamine the direction the world is to take, and to ask what can be done and what are the consequences of the alternatives.

Survival behaviors of old have become a threat, and it is time to reexamine the direction the world is to take.

The Thoughts of Saskatchewan Futurists

Among the people who have attempted to define the shape of the future are a group of Saskatchewan educators brought together in 1980. Fifty individuals representing different organizations and school divisions met to identify issues and discuss ways of dealing with the issues through education. The conference participants divided into five groups to discuss the future.

Four of the five groups raised the issue of technology as one which will profoundly affect the future. Participants believed the increase in technology will occur in a large number of areas and will affect many facets of society. Technology in the work place will cause a decline in the number of jobs, and the availability of such machines as home computers will expose children to technology. Communications will be affected, as will such things as transportation and national defence. One group proposed that the interest in advancing technology

could result in a return to the Sputnik era of the fifties, with its increased emphasis on the sciences and its search for "super minds."

The information explosion was discussed as an offshoot of technological advances. Information which was once available only by making a trip to the library or some other resource centre will become increasingly available in homes and schools through the use of computers, interactive television, televideo, and other such advances in communication. These technologies will introduce more and more external stimuli into the lives of both adults and children.

Rapid social change was mentioned by three of the five groups at the conference. Changes in values, morality, and the family unit could all become evident in years to come. Groups with like values will increasingly band together. One group of participants saw an increase in questioning of the "status quo" as a result of this; another saw decentralization as a result. Increased leisure time was mentioned as a social change which would result from advances in technology in the work place.

There was a general feeling that economic uncertainty will continue on into the next century. Declining resources will continue to be an issue, as will unemployment. One group felt this uncertainty could result in a feeling of apathy among people, or a feeling that the future is out of their hands.

The future was seen by many as a time of conflict. Social changes, uncertainty, unemployment, and economic decline were all thought to contribute to various types of conflict. The clustering of interest and value groups would no doubt result in organization for group rights. International conflict is in evidence at the present and will, in all likelihood, continue. One group saw conflict occurring between international and national interests.

The interest in advancing technology could result in a return to the Sputnik era of the fifties, with its increased emphasis on the sciences and its search for "super minds."

In summation, it can be said that all groups saw the future as a time of change. Four of the groups felt that the rapid changes currently occurring will continue into the next century. One group felt the changes will not be radical, but that, even so, the next century will indeed look different from the present.

Summary

Futurists paint varied pictures of life beyond the year 2000. They differ on such fundamental issues as how change occurs and whether or not the future can be controlled. There are those who say current trends will dictate what happens in the year 2000 and others who say efforts should be focused on attaining the desirable. All contribute to an understanding of what could occur, what is likely to occur, and what occurrences are preferable. The challenge for educators is to look at the work of the futurists in order to plan appropriate school experiences.

CHAPTER TWO
The Curriculum of the Future

A study of predictions and future trends leads to the question "What exactly will students need to know in the future?" In some respects, the answer to the question comes easily. It is already obvious that technologies will play an important role in the life of future generations. It is also obvious that the job market is changing rapidly and students, therefore, need to become adaptable, self-reliant, and open to change. Other curriculum issues are not as easy to discern, but decisions can be made based on two significant issues:

1. The world is changing. There is evidence everywhere that the world of today is not the same as the world of 50 years ago, or even five years ago. It is safe to say the world will continue to change at a rapid pace.
2. The world as a global community is in trouble. There is cause as there has never been before for people to learn to solve their problems differently.

In the past, curriculum has been seen primarily as content (knowledge, facts, and information). In the future, what students learn in school must also include processes, skills, attitudes, and values. Although the knowledge component is still essential, education has become much broader than knowledge alone. In his article "Education for the 21st Century," Arthur Lewis says, ". . .information alone is not enough to solve problems. The ability to comprehend that information — to analyze it, synthesize it, and apply it in a value oriented way — is also necessary." (p.10)

There are many consistencies between past and present societies, and a future-oriented curriculum should continue to maintain balance between change and universal human aspirations.

This idea is not new. Nor is everything about past and present systems bad. To the contrary, many of the topics discussed are a part of the current system. Highlighting such things as communication skills and critical thinking serves to reaffirm their relevance to education for the future.

It is also important to note that changing curriculum to keep stride with changes in society does not mean throwing out traditional priorities and values. There are many consistencies between past and present

societies, and a future-oriented curriculum should continue to maintain balance between change and universal human aspirations.

What follows is a list of curriculum changes often discussed as important in preparing for the future. Some will help students cope in a rapidly changing world. Others will contribute to the betterment of the world for future generations. Many of them are interrelated and often the teaching of one is dependent upon the teaching of another.

Futurists are in general agreement that the world is in a state of change.

Figure 1 provides an overview of the topics discussed in this booklet. It should be noted that some topics could be placed under both headings. Problem-solving, for example, certainly fits in both categories. However, for the sake of emphasizing the point that there are two major reasons for looking ahead in curriculum planning, an attempt has been made to separate the two.

Figure 1: Curricula of the Future

Educating for a Changing World	**Educating for a Better World**
Communication Skills	Self Concept Development
Life-long Learning	Citizenship Education
Understanding Change	Global Education
Problem-solving	Peace Education
Critical Thinking	Values Education
Organizing Information	Aesthetic Education
Technological Literacy	Environmental Education
Career Education	
Consumer Education	
Use of Leisure Time	

Educating for a Changing World

Futurists are in general agreement that the world is in a state of change. For some, it is the change from an industrial to an information society. For others, change is a transformation moving people into a new order or a new way of thinking.

Besides pointing to specific changes, many futurists discuss the rate at which change is occurring. In their booklet "Futures Unlimited" Robert Fitch and Cordell Svengalis point out that "seldom in history have individuals been witness to changes of comparable velocity or pervasiveness occurring within the time span of a single generation." (p.2)

Specific changes and the rate of change have implications for education. How can students be best prepared to live in a rapidly changing world? The following list includes knowledge, skills, or values that are often discussed by futurists and educators in attempts to answer this question.

Communication Skills

Whether a student is planning to enter a post-secondary institution or the work force, communication skills are essential.

Communication skills have been an important part of contemporary education and should continue to be. Many futurists talk about the importance of both oral and written communication skills. Whether a student is planning to enter a post-secondary institution or the work force, communication skills are essential.

Communication skills and thinking skills are closely connected. In writing a persuasive essay, for example, a student must perform a number of mental operations to get his or her thoughts in order. When a cashier is asked a question over the counter in a shop, mental operations are required in formulating an answer. Many educators believe that critical thinking can be taught and practiced through teaching communication skills.

The current explosion of information necessitates that people have the skills to comprehend and interpret both written and spoken information. People are bombarded with media presentations, newscasts, and sophisticated advertising as they have never been before. In addition, people need highly developed communication skills to deal with change and with the array of problems faced at home and throughout the world.

Life-long Learning

The changing world necessitates that people develop a whole new attitude toward learning. The adage "you can't teach an old dog new tricks" no longer rings true. Even now, people are changing jobs more often than in the past, and futurists suggest this trend will continue as the job market continues to change. People should, therefore, be open to the idea of retraining, returning to school, learning new skills on the job, or learning about new technologies as the need arises. They must be self-reliant and prepared

to take charge of their own learning.

Besides developing a new attitude toward learning, students should learn the *skills* of life-long learning. These include determining when new learning is needed, knowing how to acquire the new learning, and being able to apply it to a particular situation. People should understand there is no one set of learnings or no one training that is guaranteed to be up-to-date in ten years time.

Understanding Change

In the 1980's, people are living with rapid change. It is therefore essential that students learn about how change takes place, how to cope with change, and how to look ahead to the implications of change. At a time when change is occurring in so many facets of life, it is important for people to be able to analyze and question change rather than accepting it and its consequences as inevitable.

Many changes are, of course, positive and an understanding of change will help people cope when a change affects them directly. People's reactions to change are tied to how they see themselves. If people see themselves as "finished products" needing no further education or learning, high levels of stress and tension will accompany change. Coping with change, then, is closely related to seeing oneself as a life-long learner.

It is important for people to be able to analyze and question change rather than accepting it and its consequences as inevitable.

In addition to teaching students about change and fostering the attitudes of life-long learning, schools can examine change throughout history. Change in its historical context can be applied to present situations.

Students should also understand how to foster change and how a group of people can be encouraged to consider change. The ability to work in groups (with co-workers, family members, and on committees) is important, as is an understanding that change takes time and that those affected by change must be involved in planning for change.

Problem-Solving

The teaching of problem-solving strategies is not new to the education system. For decades now schools have attempted to teach the scientific method and have included problem-solving in the mathematics curriculum. In a future-oriented curriculum, however, problem-solving strategies include ways of solving personal problems, family problems, job related problems, community problems, and other types of conflict.

Problem-solving skills and attitudes prepare students for the new and the unpredictable. Students can learn to analyze a situation, identify and define the problem, consider alternatives, make decisions, plan courses of action, and carry a plan toward solution of the problem.

Critical Thinking

Many parents and educators assert that students in schools are not learning to think. Futurists agree that in years to come people will need, more than ever, to be able to think critically and creatively, make decisions, and deal with problems.

Thinking is difficult to define precisely, but can be seen as a process which involves a variety of mental operations. Thinking is often seen as a number of steps which can be applied to a particular problem or question. The steps include such things as memorizing, comprehending, applying, analyzing, synthesizing, and evaluating. Critics of what is now occurring in schools claim that students are not getting past the first steps of recalling factual information. Application of facts to real-life situations is often seen by schools as a goal or end result, and there is little emphasis on putting pieces of information together in new ways.

Futurists agree that in years to come people will need, more than ever, to be able to think critically.

Problem-solving and decision-making require that people know how to come up with unique and creative solutions, and that they know how to test and evaluate their solutions. In addition, the vast amount of information that is and will continue to become available will require that people have highly developed thinking skills in order to interpret and fit new knowledge into existing structures.

Organizing Information

Because of the increasing amount of information available, students need to have highly developed organizational and reference skills. The means of storing information are changing and people must learn new ways of accessing and retrieving it.

Organizing information is closely related to both thinking and communicating. If students are to become critical thinkers and problem-solvers, they must know how to find and organize material.

Understanding Technology

Futurists' viewpoints about technology, its role, and its implications are varied and to some degree polarized into opposite camps. Some see technology as the cause of problems such as unemployment and

an unprecedented human reliance on machines. Others see technologies such as rapid world-wide communication systems as the solution to problems. Some consider the study of technology in schools to be of minor importance; others see it as essential.

What most futurists agree on, however, is that technology, for good or bad, is having a major effect on society. Evidence indicates this trend will continue and expand to affect people's lives to an even greater degree. Even today, technology is advancing so rapidly there is little time to consider the consequences before a change is adopted. In the future, it is expected that the time between developments will be shortened considerably.

Recent information suggests that programs in schools should focus on generic skills and concepts such as information management rather than the specifics of particular operational skills.

Technology in the curriculum can be divided into two categories: learning to utilize technology, and learning about technology. Recent information suggests that programs in schools should focus on generic skills and concepts such as information management rather than the specifics of particular operational skills.

In addition, futurists stress that students should understand the social implications of technology in order to develop an understanding of how technology affects people. Schools can deal with this in part through science programs which emphasize the importance of considering the effects of scientific advancements on society and the environment.

Technology as a major force of change will be with us for the forseeable future. Schools must accept a degree of responsibility for teaching students about its functions and the possible consequences of developing and adopting various technologies.

Career Education

There is much speculation about how technology will change the world of work. The number of jobs for unskilled workers in the production of goods (automobile manufacturing plants, for example) have already decreased. Some see a trend toward increases in the service industries (communication and consultative services, for example).

It is possible that people in the near future will retrain several times during their working years.

Whether or not these particular trends continue, the job market is fluctuating and it may not be adequate to be trained at one job. It is possible that people in the near future will retrain several times during their working years. Career education, then, is assuming increasing importance.

Career education is no longer just learning about various occupations, selecting one, and finding out what has to be done to get that job. Students must adopt the attitude of life-long learning as it relates to work. They must understand the fluctuating job market and how technology is affecting the nature of work.

With the prediction that there will be an increase in the number of jobs in the service industries, interpersonal skills and communication skills become increasingly important aspects of career education. No matter how unpredictable the future, it can be safely said that people will be working with other people.

Consumer Education

"Consumer beware" is a phrase often heard with regard to advertising, promotions, and sales pitches. New technology is providing advertisers with an ever more sophisticated "pitch." Students need to be able to analyze and interpret what they're being told through the media.

While the media is encouraging people to consume and buy more goods, natural resources are being depleted. Some consumer advocates use the term "conserver education" and support the teaching of awareness and skills of conservation.

While the media is encouraging people to consume and buy more goods, natural resources are being depleted.

The hours children spend in front of the television has been a growing concern of educators in recent years. One of the reasons for concern is the amount of advertising children are exposed to. Consumer education must begin early and continue throughout school in order to give students an understanding of how advertising works and assist them in making informed choices. Critical thinking, problem-solving, and decision-making are important aspects of consumer education.

Use of Leisure Time

Futurists predict that life styles in this society will be altered. Some see changes in the work week, with people having a greater number of leisure hours. Education can help students make good use of leisure time.

Although leisure time activities may be seen as frivolous to some, they are not. There is a link between leisure time activity and life-long learning. Students who leave school as self-directed learners are prepared to take up new activities throughout their lives. Activity and achievement are tied to feelings of self worth and are essential to a person's

well being. Leisure activities can do much to enhance quality of life for all people.

Educating for a Better World

Much discussion on the future and education deals with the practical aspects of helping students cope in a changing society. Societal and technological change require that students have different or more highly refined skills to enter post-secondary institutions and the work force. Education, then, should be responsive to change in order for people to live and work productively in society.

Many futurists (Toffler, Ferguson, and Harman to name a few) point to such things as mass hunger, the threat of nuclear disaster, declining energy reserves, and environmental damage as reasons to actively pursue societal change. These futurists believe that education can play a role in this change. Although there is no consensus on exactly what that role should be, there are a number of topics commonly discussed which stem from the basic belief that education should contribute to human betterment.

Self Concept Development

The importance of a healthy self concept is not a new idea. Since the school assumed some responsibility for the social and emotional development of the child, self concept development has been an issue. In discussing education for the future, self concept development assumes renewed importance.

Children can become neither critical thinkers nor life-long learners without having a sense of confidence. To think critically and solve problems, people must be willing to take risks, to try new ideas and creative solutions, and to act independently. Life-long learning requires that people be open to change and willing to try new things.

Futurists also talk about self concept development in relation to something as broad as world peace or international affairs. How people feel about themselves affects how they feel about others. A person with a healthy self concept is capable of being a responsible member of his or her own family and a responsible citizen of the community, the country, and the world.

A person with a healthy self concept is capable of being a responsible member of his or her own family, and a responsible citizen of the community, the country, and the world.

Career education is no longer just learning about various occupations, selecting one, and finding out what has to be done to get that job. Students must adopt the attitude of life-long learning as it relates to work. They must understand the fluctuating job market and how technology is affecting the nature of work.

With the prediction that there will be an increase in the number of jobs in the service industries, interpersonal skills and communication skills become increasingly important aspects of career education. No matter how unpredictable the future, it can be safely said that people will be working with other people.

Consumer Education

"Consumer beware" is a phrase often heard with regard to advertising, promotions, and sales pitches. New technology is providing advertisers with an ever more sophisticated "pitch." Students need to be able to analyze and interpret what they're being told through the media.

While the media is encouraging people to consume and buy more goods, natural resources are being depleted. Some consumer advocates use the term "conserver education" and support the teaching of awareness and skills of conservation.

While the media is encouraging people to consume and buy more goods, natural resources are being depleted.

The hours children spend in front of the television has been a growing concern of educators in recent years. One of the reasons for concern is the amount of advertising children are exposed to. Consumer education must begin early and continue throughout school in order to give students an understanding of how advertising works and assist them in making informed choices. Critical thinking, problem-solving, and decision-making are important aspects of consumer education.

Use of Leisure Time

Futurists predict that life styles in this society will be altered. Some see changes in the work week, with people having a greater number of leisure hours. Education can help students make good use of leisure time.

Although leisure time activities may be seen as frivolous to some, they are not. There is a link between leisure time activity and life-long learning. Students who leave school as self-directed learners are prepared to take up new activities throughout their lives. Activity and achievement are tied to feelings of self worth and are essential to a person's

well being. Leisure activities can do much to enhance quality of life for all people.

Educating for a Better World

Much discussion on the future and education deals with the practical aspects of helping students cope in a changing society. Societal and technological change require that students have different or more highly refined skills to enter post-secondary institutions and the work force. Education, then, should be responsive to change in order for people to live and work productively in society.

Many futurists (Toffler, Ferguson, and Harman to name a few) point to such things as mass hunger, the threat of nuclear disaster, declining energy reserves, and environmental damage as reasons to actively pursue societal change. These futurists believe that education can play a role in this change. Although there is no consensus on exactly what that role should be, there are a number of topics commonly discussed which stem from the basic belief that education should contribute to human betterment.

Self Concept Development

The importance of a healthy self concept is not a new idea. Since the school assumed some responsibility for the social and emotional development of the child, self concept development has been an issue. In discussing education for the future, self concept development assumes renewed importance.

Children can become neither critical thinkers nor life-long learners without having a sense of confidence. To think critically and solve problems, people must be willing to take risks, to try new ideas and creative solutions, and to act independently. Life-long learning requires that people be open to change and willing to try new things.

Futurists also talk about self concept development in relation to something as broad as world peace or international affairs. How people feel about themselves affects how they feel about others. A person with a healthy self concept is capable of being a responsible member of his or her own family and a responsible citizen of the community, the country, and the world.

A person with a healthy self concept is capable of being a responsible member of his or her own family, and a responsible citizen of the community, the country, and the world.

Citizenship Education

The importance of citizenship education is a topic often discussed. In Canada, the system of government depends upon citizen participation. It follows, then, that students should learn to solve problems and make decisions relating to their responsibility as citizens. Analyzing situations, proposing courses of action, and participating in implementation of solutions are practice for future responsible citizenship.

School should be a place where students can practice social responsibility and the democratic process.

Responsibility and involvement are key. Students should realize they are decision makers, and that with involvement comes responsibility. School should be a place where students can practice social responsibility and the democratic process.

Global Education

While recognizing the importance of contributing to the family unit and the community, some futurists talk about the need for providing students with a world view or global perspective. For example, students can examine the question "What can the world strive for as a unit?" The elimination of hunger might be an answer, and students can explore that issue.

As part of the global perspective, a cross-cultural perspective needs to be elevated in the school curriculum. Children need to understand their own culture as well as the cultures of others. They need to see what is different about cultures and what all cultures have in common. It is impossible to see interrelatedness in the world without an understanding of culture.

Global education stresses the interrelatedness of world problems and the interdependence of nations.

Educating students about others in the world is certainly part of the present curriculum. Global education, however, stresses the interrelatedness of world problems and the interdependence of nations. Students are encouraged to become willing participants in problem-solving and to develop responsibility and concern for the well-being of others. Global education strives to develop in people a sense of world community.

Peace Education

Children today have heard about such things as the arms race, nuclear testing, and the doomsday clock. Emerging studies indicate that children of the eighties are anxious about the future of the world. Many futurists and educators believe schools should provide peace education and give students the

knowledge, skills, and attitudes to actively participate in change for world betterment. Through this participation, children can grow up feeling that the future is not out of their hands.

Peace education can take many forms. Some advocates focus on conflict resolution; some focus on the promotion of international understanding; others focus on creating an aversion to violence.

Through participation, children can grow up feeling that the future is not out of their hands.

In his article "An Introduction to the Debate on Peace Education," Magnus Haavelsrud states that the content of peace education should be established within the context of the time. In his opinion, peace education at the present time should give priority to eliminating asymetric conflicts, or conflicts in which one force dominates the other (racism, sexism, and ageism, for example).

In their article "Concepts of Peace Education: A View of Western Experience," Robin Burns and Robert Aspeslagh describe an approach to peace education which is based on the belief that society can be changed and that the future is not predetermined. The key then, is understanding change. The authors state,

> The main function of this form of peace education is to involve [students] in global problems and create a climate in the school in which they can experience the factors determining their situation and the possibilities for changing it. (p.319)

Much of the content of peace education is not new to schools. Such related topics as social justice, moral education, and world studies have been incorporated in other courses of study. However, because of the current world situation and the need to deal with children's anxieties about their futures, there is a growing trend toward formalizing peace education in schools.

Values Education

Naisbitt sees an increased interest in values and moral education as a trend or a natural reaction to technology. It is his belief that people want high quality human interaction, particularly at a time when technology is finding its way into the home, the school, and the work place. The increased interest in values is a way of achieving balance between human concern and technological efficiency.

Others see values education as something that should be built into the education system so that people can make responsible use of technology and

responsible decisions with the knowledge that is now at hand. Values education in this light is an essential element of educating to eliminate such conflicts as racism and is connected to forms of peace education.

Values education is an essential element of educating to eliminate such conflicts as racism.

Values education is connected to many other aspects of a futuristic curriculum. When independent learning, for example, is encouraged, students need a value system on which to make responsible decisions. Studying culture, understanding change, working effectively in a group, and learning to be a responsible member of society all involve some form of values education.

Aesthetic Education

The arts are an expression of uniquely human qualities. An historical and cultural examination of the arts helps people understand where they have been in light of where they are now. Global educators talk about the importance of examining where humans are going as a unit and what they have in common in spite of their differences. The arts serve as a kind of mirror in this respect.

The arts also serve as a "window." The artist can jolt people into recognition of a behavior or value, and open the doors for people to see things in a new way.

In order for people to benefit from what the artist has to offer, they need to learn the languages of the arts. This is the purpose of aesthetic education — to provide students with the ability to take in information through the senses. Aesthetic education gives students a new way of experiencing their world and the worlds of others, and increases their awareness of and concern for their surroundings.

Experiences in the arts give students opportunities to approach problems in unique ways. Aesthetic education assumes increasing importance as futurists talk about the need for creative problem-solving and bold new solutions.

Environmental education is essential because of the major implications for the future of all living things.

Environmental Education

In recent years, people have been faced with the damage that disregard for the environment can cause. Many animal species have become extinct. Acid rain and water pollution are current problems. Energy reserves are in jeopardy. People have suffered from environmentally caused diseases such as mercury poisoning and various kinds of cancer. Low food supplies in some countries can be linked to environmental mismanagement. It is essential that preservation of the environment be dealt with

because of the major implications for the future of all living things.

Summary

It can be seen from the wide range of topics discussed that the school and its curriculum has changed significantly in the past 50 years. It is no longer appropriate for schools to offer only a basic education of reading, writing, and arithmetic. Elliot Eisner, in his article "The Kind of Schools We Need," says the following of the back to the basics movement:

> . . .the idea that schools should go back to the basics, when the basics mean the three Rs, is really a symptom of wanting too little rather than too much from schools. Reading, writing, and arithmetic have no virtue in and of themselves. They are skills and, as skills, are educationally empty. (p.3)

Virtually no futurists speak of the need to return to the kind of education offered 50 years ago. Although they are not in complete agreement as to what is "basic" in the 1980's, they generally speak of the need for independent, responsible decision-making, and the need for students to know how to deal with what is "new" in society and with changes yet to come. In addition, futurists speak of the present world situation and education's role in ensuring quality of life for future generations.

CHAPTER THREE Change in Schools

The curriculum changes discussed by futurists cannot be implemented by simply changing curriculum guides. Because many of the topics discussed in Chapter Two are related to skills and values, methods of instruction traditionally used for teaching facts or knowledge may be inappropriate. Because many of the topics deal with interpersonal relationships and skills, an environment which allows for practice is essential. Schools must provide experiences which are in keeping with proposed curriculum changes. This means people in schools must also change — change their attitudes about the purpose of school and the role of the teacher, change the way they plan the school program, and change the way the school interacts with the home and the community. All of the school's operations must be compatible with what the school is attempting to teach.

Instruction

How something is taught is just as important as what is taught. An examination of content, then, has implications for instruction. Again, the emphasis on instruction is not new. However, a discussion serves to reaffirm its importance and justify the need for supporting teachers in their efforts to adjust methods of teaching. A number of aspects of instruction can be considered when planning a curriculum appropriate for students both now and in the future.

How something is taught is just as important as what is taught.

Instructional Strategies

Instructional strategies must be matched with the curriculum content. Teaching, in many ways, is a decision-making process, and the selection of appropriate instructional strategies is one decision fundamental to the teaching/learning process. There is a wide range of strategies that can be used; often several strategies are appropriate.

The teacher-centered, lecture method of instruction is not appropriate for much of what is found in a futuristic curriculum. Methods of instruction can encourage students to become self-reliant, independent, responsible, aware of their own limitations and potential, and aware of methods of solving problems.

Many of the learnings discussed by futurists are best aquired in real life settings. Interactions between students and other people are essential, as are experiences in the community.

Many of the learnings discussed by futurists are best aquired in real life settings.

Individualized Instruction

The concept of continuous progress as a means of individualizing instruction was introduced in Saskatchewan over 20 years ago. A plan was developed by which students could move through the system at their own rates of progress. Although the practice was never fully implemented, it is in keeping with what futurists continue to say about school practicee.

Students learn when they are given individual attention and when what they are to learn is matched with their present level of development. Flexibility in the curriculum, then, is important. Opportunities for remediation and enrichment can do much to match curriculum with individual needs.

Much of what is said about interpersonal relationships hinges upon respect for the individual and unique differences among people. This respect can be carried into the instructional process through the provision of instruction appropriate to a student's level of development and his or her social and cultural background.

Respect for the individual and unique differences among people can be carried into the instructional process.

Technology in the Classroom

Most people would agree that a computer cannot replace a teacher. However, technology can be of great benefit to the teacher. Besides learning about technology by using it, students can work with software packages matched with their level of development. A vast amount of information can be made available through the use of technology, and students can learn the skills to access and retrieve information.

If technology is used appropriately, it can provide valuable resource support. Teachers, however, must continue to provide a supportive learning environment and plan appropriate learning experiences to meet the needs of their students.

Student Choice

In order to become problem solvers and critical thinkers, students should be allowed to make choices. Decision-making in school can begin in kindergarten. Very young students can choose learning centre activities, can plan an individual project along with the teacher, or can choose the order in which they will tackle particular tasks. The skills of responsible decision-making are taught and reinforced through student choice. Students, with the help of parents and teachers, can become active participants in their own education, developing the skills of life-long learning.

Parental Involvement

Parents want to be involved in the education of their children. In the past, parents were discouraged from spending time in the classroom. The responsibilities of home and school were separate and distinct. As the walls between school and community break down, there is more sharing of responsibility and more reason for parents to be involved in the school.

Parents can be involved in a variety of ways. They can take part in local school planning, work with their children and the school counsellor to help make program choices, volunteer to work in the school, offer their place of employment as an alternative setting for learning, or participate in special school events. When parents are meaningfully involved they are likely to support the school program and assist their children in learning.

Out-of-School Experiences

Futurists talk about the need for schooling to be integrated with the community. Students expand their knowledge of the world through direct experience, and when the boundaries between school and "real life" are too distinct, the relevance of what is learned is unclear.

Any community, no matter what the size, is ripe with people who can become involved with teaching and learning.

Out-of-school experiences can include such things as field trips, exchange programs, and work programs. For these to have meaning to the student, they must be linked with what occurs in the classroom and with the student's previous experiences.

Involvement of Non-Educators

Another means of breaking the barriers between school and real life is to bring non-educators into the school experience. Any community, no matter what the size, is ripe with people who can become

involved with teaching and learning. Futurists support the idea that students should be able to relate what they learn in school to what goes on in the community and the world.

The possibilities for involving non-educators are endless. Students can be exposed to artists, business people, farmers, people who earn their living from fishing and trapping, or people in the food industry. When the content needed for particular learning experiences comes from people outside the school, articulation between the school and community assumes increasing importance. The teacher becomes the all important facilitator of learning, providing the link between school and community.

Student Evaluation

It is relatively easy to determine whether or not a student has learned facts or knowledge. The teacher asks a question and then evaluates the answer, which is usually either right or wrong. When the school curriculum broadens to include values, attitudes, and processes, methods of evaluation must change. To determine whether or not a student has acquired a skill, for example, a teacher can provide an opportunity for demonstration.

Evaluation is a means of determining whether or not learning has taken place. Constant evaluation is necessary in order for a teacher to effectively plan future lessons. A diverse curriculum includes such a variety of experiences that teachers need to be familiar with as many strategies for evaluating as for instructing.

Implications for Teachers

Expanding the range of educational experiences and practices has obvious implications for teacher training and inservice. The most obvious, perhaps, is the need for teachers to be equipped with the skills needed to instruct and evaluate in a diverse curriculum. Less obvious, but at least as important, is the need for teachers to adopt the attitudes and values that futurists say are and will continue to be essential.

Teachers themselves need to adopt the attitudes and values that futurists say are and will continue to be important.

If teachers themselves approach learning with the attitudes of the life-long learner, new requirements and fluctuations will be less threatening. There are many unknowns when planning for the future and teachers should be prepared to adapt and learn new skills.

The onus for this cannot be placed solely on teachers. Administrators, trustees, and government officials must provide teachers with both material and moral support. Futurists say that students should not be seen as "finished products" when they graduate from school. Neither should teachers. It is impossible to equip people with all that they need to meet an unknown future. The skills and attitudes of life-long learning will help people evaluate change, support changes they believe in, and participate in planning for change.

School Planning

As what actually occurs in the classroom changes to reflect the aims of a future-oriented curriculum, so should school planning practices. They way a school's program is planned establishes the environment within a school, that is, the environment within which learning takes place. The whole school and not just individual teachers should model what is in the curriculum.

A vision encourages people to actively participate in moving forward rather than accepting without question what is in place.

The Concept of "Vision"

Looking to the future includes developing an idea of where one wants to go. People in schools can, as a group, develop "a vision" for their school. They can answer the question "What would our school look like if it were just as we would like it?" The vision gives people in the school something to work toward and strive for. It encourages people to actively participate in moving forward rather than accepting without question what is in place.

Attending to What is Known About Change

Because society is currently undergoing rapid change, change itself is a major theme in writings about the future. How change occurs, how people react to change, and how change can be facilitated are all topics of much research and speculation.

A considerable amount of knowledge has accummulated on change in schools. It has been determined that real change does not occur without the support of those affected by the change. It is also known that change takes time, must be supported with appropriate resources, and involves considerable follow-up and replanning. Attending to what is known about change is essential if future-oriented innovations are to be implemented in schools.

Involvement

School planning includes such things as setting goals for future directions, looking at school programs, planning special functions, and considering instructional practices in the school. It is essential that the people involved in the day-to-day life of the school take part in school planning. Collaborative problem-solving and decision-making are essential components of the curriculum for the future and must become an integral part of school functioning. Teachers, of course, are the people who need to be involved the most. Where appropriate, parents, students, and community can become involved in the school planning process.

Communication Between School and Community

Futurists predict that the boundaries of school will expand to include more out-of-school experiences. Groups such as business people, cultural organizations, and post-secondary institutes can be asked to contribute to the curriculum development process. Community members and local organizations can be asked to participate in school programs. Communication with the community, then, is important. Everyone should be aware of the goals of education and the vital role that can be played by members of the community.

Everyone should be aware of the goals of education and the vital role that can be played by members of the community.

Local Input

Global educators talk about the need for people everywhere to recognize the ways in which they are alike and the ways in which they are different. The school curriculum reflects the skills, knowledge, and attitudes that are essential for students as a group. At the same time, provisions are made through remediation, enrichment, and individualized instruction for unique differences among students. And as students differ from one another, so do communities.

Local input in curriculum planning allows a community or school division to meet the unique needs of its students. Religious affiliation, cultural diversity, and the particular employment potential of the community can be considered through local input in school planning.

Local input is also in keeping with what is known about change and the need for involvement of those affected by change. People at the local level are best able to determine what their students need for life beyond school. Their input enhances what is thought

to be essential for all students to cope with life in the future.

School Structure

Because of the increased need for people to retrain and learn new skills, futurists predict that the structure of schools will alter in the future. Once people have developed the attitudes of life-long learning, it will be acceptable for them to return to school at various points in their lives. If it is no longer the norm for schooling to end with grade 12, it will be much easier for what we now call drop-outs to return to school. Schooling in general could be seen by people as a continuing process, and the stigma now attached to returning to school after one is 18 could disappear. School would then be seen as a place where people go as responsible and self-directed learners.

Schooling could be seen as a continuing process, and the stigma now attached to returning to school after one is 18 could disappear.

Implications

Changing school planning practices has a number of implications. Primarily, people involved in schools must recognize their changing roles. Teachers must see themselves as responsible problem-solvers and decision-makers. Administrators must see themselves as educational leaders and facilitators of change. Parents must see themselves as valuable contributors to the educational process. The community must see itself as an extension of school, the place where knowledge, skills, and attitudes are applied and practiced. With all groups working together, schools can function as the place where students willingly prepare to participate in a future of rapid change.

The Old and the New

Our present system of education was designed for an industrial society in which education was seen as something that prepares people for work. Because of this, learning takes place in an institution and ends when formal education is complete. Leisure time is looked at as something that people have on their hands after they've retired from their jobs.

Many futurists see society moving from an industrial society to an information society. Recent advancements in the field of technology have actually changed the world we live in. Change in the nature of work is influencing the meaning and purposes of education. A vast amount of knowledge is now readily accessible through technological means, and it is no longer appropriate to see education simply as a way of delivering knowledge.

In her book *The Aquarian Conspiracy*, Marilyn Ferguson looks at education in this light and characterizes some of the differences between the newer and more traditional approaches to education. She says that the "old" education was designed to achieve norms, obedience, and correct answers, and the "new" education motivates for life-long learning, strengthens self-discipline, awakens curiosity, and encourages creativity.

Education in Saskatchewan is neither "old" nor "new." Many advances have been made and Saskatchewan schools have proven receptive to change in many respects. However, change in education is always slow. Education is a massive endeavor and a great many people need to be involved. Because schools in the past did not educate people to be life-long learners, change does not come easily. And change, both in curriculum and school planning, takes time.

It is up to all those involved in education to accept responsibility for future actions.

Planning is the key. Many futurists are optimistic because of their faith in the human capability to plan for the future. Fitch and Svengalis state,

> Although there are many pessimistic scenarios about the future, futurism is basically optimistic. Much of the literature is based on the attitude that, though problems of great magnitude exist, human intelligence can be applied in more deliberate ways to deal successfully with them. (p.17)

Futurists have provided ideas for the role that education can play. It is up to all those involved with education to accept responsibility for future actions. This is indeed crucial.

Resources

Books

Bowman, J., Kierstead, F., Dede, C., & Pullian, J. (1978). *The far side of the future*. Washington, DC: World Futures Society.

Ferguson, Marilyn. (1980). *The aquarian conspiracy*. Los Angeles, CA: Jeremy P. Tarcher, Inc.

Fitch, R. M., & Svengalis, C. M. (1979). *Futures unlimited: Teaching about worlds to come*. Washington, DC: National Council for the Social Studies.

Harman, W. (1979). *An incomplete guide to the future*. San Francisco, CA: San Francisco Book Company.

Naisbitt, J. (1982). *Megatrends*. New York, NY: Warner Books, Inc.

Shane, H. (1981). *Educating for a new millenium*. Bloomington, IN: Phi Delta Kappan Educational Foundation.

Toffler, A. (1980) *The third wave*. New York, NY: William Morrow and Company, Inc.

Journals

Apple, M. W. (1983). Curriculum in the year 2000: Tensions and possibilities. *Phi Delta Kappan, 64*(5), 321-326.

Beyer, B. K. (1984). Improving thinking skills — defining the problem. *Phi Delta Kappan, 65*(7), 486-490.

Burns, R., & Aspeslagh, R. (1983). Concepts of peace education: A view of western experience. *International Review of Education, 29*(3), 311-330.

Dyer, J. (1984). Deterrents to change. *Education Canada, 24*(1), 28-33.

Eisner, E. W. (1984). The kind of schools we need. *Interchange, 15*(2), 1-12.

Haavelsrud, M. (1983). An introduction to the debate on peace education. *International Review of Education, 29*(3), 275-280.

Henchy, N. (1985). Post industrial education: Schooling in the information society. Paper presented at the Canadian Education Association 1985 Short Course, Banff, Alberta.

Houston, P. D. (1983). Planning for learning in the world of tomorrow. *Educational Leadership, 41*(1), 47-48.

Larson, D. H. (1983). Designing school curriculum for the twenty-first century. *NASSP Bulletin, 67*(464), 10-14.

Lewis, A. J. (1983). Education for the 21st century. *Educational Leadership, 41*(1), 9-10.

Moynes, R. E. (1984). Megatrends and education's future. *Education Canada*, Fall, 1984.

Paul, W. P. (1984). Critical thinking: Fundamental to education for a free society. *Educational Leadership, 42*(1), 4-14.

Quinn, J., Kirkman, J., & Schultz, C. J. (1983). Beyond computer literacy, *Educational Leadership, 41*(1), 38-39.

Saskatchewan Education. (1981). Minister's Mini-Conference. Curriculum Development for the '80's Conference Proceedings, Regina.

Small, M. G. (1983). Education in crisis: Preparing students for the 21st century. *Curriculum Review, 22*(4), 13-17.

Sykes, G. (1982). The case for aesthetic literacy. *Educational Leadership, 39*(8), 596-598.

Therrien, S. (1984). The changing society, the changing school. *The Canadian School Executive, 3*(8), 3-6.

Troutman, B. I., & Palombo, R. D. (1983). Identifying futures trends in curriculum planning. *Educational Leadership, 41*(1), 49.

Warnat, W. (1983). The challenge: Developing technological literacy in education. Paper presented at the Science and Mathematic Education Needs Assessment Conference, Ypsilanti, MI. June, 1983.

Audio Tapes

Educating for Globalism. (1984). Washington, DC: World Futures Society.

Educating the Information Society (Part 1). (1984). Washington, DC: World Futures Society.

Educating the Information Society (Part 2). (1984). Washington, DC: World Futures Society.

Education for Peace. (1984). Washington, DC: World Futures Society.

Educational Curriculum. (1984). Washington, DC: World Futures Society.

Shane, H. (speaker). (1981). *Education for a New Millenium*. Alexandria, VA: Association for Supervision and Curriculum Development.